



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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August 31, 1994

Mr. Frederick D. Fox  
Kennecott Utah Copper  
P.O. Box 525  
Bingham Canyon, UT 84006-0525

RE: Application of Municipal Sewage Biosolids, Bingham Canyon Mine, M/035/002, Salt Lake County, Utah.

Dear Mr. Fox:

The Division has reviewed your plans to use municipal sewage biosolids in several test plots at the Bingham Canyon Mine. However, due to a lack of specificity regarding the plan, we cannot approve the plan at this time.

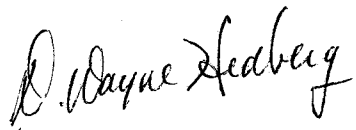
Unlike the previous approved plans for sewage biosolids, this plan does not provide sufficient detail regarding construction or monitoring of the plots:

1. Test plot layout and treatments need to be specified. Will biosolids be applied as a surface application or worked into the soil? If worked into the soil, at what depth (6", 12", ?")? To what extent will treatments be replicated?
2. Prior to application of biosolids, the following soil tests must be performed on a composite sample for each test cell and for the biosolids materials: pH, SAR, EC, nitrogen as nitrate and nitrite, water holding capacity, CEC, acid-base analysis, organic matter content, soil texture, phosphorus, DTPA extractable metals (Fe, Zn, Cu, Mn, Cd, Pb, Ni, Cr), saturation extractable metals (Ca, Na, Mg), carbon to nitrogen ratio (C:N), and tests for As, Hg, Mo, and Se. The composite sample should be composed of 4-8 grab samples of 0 - 12" depths.
3. After application, the tests identified in #2 (Pending initial analysis, some parameters may be dropped from future testing) are to be repeated quarterly for the first year at depths of 1, 2, 3, 4, and 5 feet, from a downslope location at each cell; and annually thereafter. Reports are to be submitted on an annual basis.

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An adequate response to these items will expedite the Division's approval. Please note, our approval will be conditioned upon approval from the Division of Solid and Hazardous Waste and Division of Water Quality. If you have any questions, please feel free to call me at 538-5340

Sincerely,

  
for Lynn Kunzler  
Reclamation Specialist

jb  
cc: H. Sauer, DOGM  
Lisa Rogers, DWQ  
m3502.bio